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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/007,175	10/23/2001	Keijiro Watabe	01650/LH	5677

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EXAMINER	
MISLEH, JUSTIN P	
ART UNIT	**PAPER NUMBER**
2612	

DATE MAILED: 11/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/007,175	Applicant(s) WATABE ET AL.	
	Examiner Justin P. Misleh	Art Unit 2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 August 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1, 3 - 7, and 9 - 14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 3 – 7, 9 – 11, and 13* is/are rejected.

7)☒ Claim(s) *12 and 14* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 October 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 4, 2005 has been entered.

Response to Arguments

2. Applicant's arguments filed August 4, 2005 have been fully considered but they are not persuasive. The Examiner approves Applicant's amendment to the abstract; there are no further objections to the disclosure.

3. With respect to amended independent Claims 1, 6, and 13, Applicant mainly argues that Gordon et al. do not disclose "whereby the moving amount of the moving pedestal is obtained by measuring a length of a portion of a wheel of the moving pedestal, which has been brought into contact with the floor surface" on the basis that Gordon et al. measures the length without accounting for the abrasion of the wheels as they contact the floor surface. Applicant additionally argues, "Gordon et al. does not disclose determining the changing radius of the wheels."

4. However, the Examiner respectfully disagrees Applicant's position. First of all, Applicant has assumed that the Gordon et al. wheel radius is ever changing due to said abrasion.

In fact, Gordon et al. does not even specify as to what materials the wheels may be manufactured with or even that the wheels may degrade with use. Secondly, even if Gordon et al. were to imply a certain material for the wheels, it would not be inherent that the wheel made of the certain material will degrade and change radius with use. Third and finally, the claims do not even require "determining the changing radius of the wheels."

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. **Claims 1, 3 – 7, 9 – 11, and 13** are rejected under 35 U.S.C. 103(a) as being unpatentable over Gordon et al. in view of Fellous.

7. For **Claim 1**, Gordon et al. disclose, as shown in figures 1C, 2, 5A – 5F, 7, and 8 and as stated in columns 4 (lines 10 – 64), 5 (lines 36 – 58), 6 (lines 31 – 37), 7 (lines 50 – 66), 10 (lines 39 – 68), 11 (lines 1 – 4), and 12 (lines 16 – 37), an image pick-up method for picking up an image of an object with a camera mounted via a pan head on a moving pedestal, said method comprising:

setting a reference position (initial encoder count from incremental position encoder 194) on a floor surface on which the moving pedestal moves and a reference angle (initial encoder count from wheel angle encoder 192) of the moving pedestal;

detecting a moving amount of the moving pedestal from said reference position and a rotation angle of the moving pedestal from said reference angle (by means of the encoders 192 and 194);

finding a position and an angle of the camera with respect to the object based on said reference position, said reference angle, said moving amount and said rotation angle (all of the above factors are used by the microprocessor 180 to calculate a "position error signal" used to produce an appropriate motor velocity for the motors of the moving pedestal); and

transmitting data of the position and the angle of the camera with respect to the object to a computer for creating an image containing a real object image of the object taken with the camera (see column 10, lines 64 – 68; column 11, lines 1 – 4; and column 12, lines 16 – 37);

wherein said detection means detects the moving amount of the moving pedestal by measuring a length of a portion of a wheel of the moving pedestal, which has been brought into contact with the floor surface (see explanation below).

The incremental position encoder (194) is responsible for monitoring motor movement by encoding motor rotations. The wheel moves by rotation as the motor drives by rotation. Therefore, determining motor movement by encoding motor rotations directly corresponds to measuring the length of a portion of a wheel, which has been brought into contact with the floor surface. By measuring counting encoding motor rotations, Gordon et al. is effectively determining the distance moved from the reference position (see column 10, lines 60 – 69; and column 11, lines 1 – 4).

In summary, Gordon et al. clearly disclose transmitting data of the position and the angle of the camera with respect to the object to a computer for creating an image containing a real

object image of the object taken with the camera; however, Gordon et al. do not disclose an image pickup method for operating together a real object image of an object taken with the camera and another image or a computer for operating together the real object image of the object taken with the camera and said another image based on the position and the angle of the camera with respect to the object.

On the other hand, Fellous also disclose an image pick-up method for capturing images of an object with a camera mounted on a moving pedestal. More specifically, Fellous teach, as shown in figures 1 and 2 and as stated in columns 5 (lines 3 – 23, 31 – 49, and 59 – 67), 6 (lines 6 – 25, 34 – 39, and 49 – 53), 7 (lines 1 – 18), an image pick-up method for capturing images of an object (24 and 13) with a camera (2) mounted on a moving pedestal (5) and for operating together (via computer 11) a real object image ("real images generated by the camera 2") of an object taken with the camera ("fine-lined rectangle 24") and another image ("synthetic image" shown on monitor 12), wherein a computer (11) is provided for operating together ("create a hybrid combined image" – see column 5, lines 18 – 27) the real object image ("real images") of the object taken with the camera (2) and said another image ("synthetic images") based on the position and the angle of the camera with respect to the object ("geometrical coherence" – see column 6, line 54 – column 7, line 15).

As stated in column 2 (lines 1 – 25) of Fellous, at the time the invention was made, it would have been obvious to one with ordinary skill in the art to have provided a computer for operating together the real object image of the object taken with the camera and said another image based on the position and the angle of the camera with respect to the object as taught by Fellous, in the image pick-up method including a camera mounted on a pedestal disclosed by

Gordon et al., for the following advantages: facilitating easy determination in a host computer of a parametric model of a real camera analogous to a virtual camera, providing real control of a virtual camera by a real camera, securing perfect coherence between a real image and a virtual image, and permitting a free combination of real images and geometrically coherent synthetic images.

8. As for **Claim 3**, Gordon et al. disclose, that the moving pedestal is comprised of three wheels wherein each wheel is provided with a wheel angle encoder (194). The wheel angle encoders (194) provide data to the microprocessor (180), wherein the microprocessor (180) continuously subtracts the current positional data (including the position and rotation angle of the moving pedestal) from target positional data to obtain a position error signal. Therefore, the rotation angle is calculated based upon the moving distances of all three wheels, which includes two wheels that are distant from each other in terms of a moving direction. In fact, since each of the three wheels are at a separate vertex of an equilateral triangle making up the base of the moving pedestal each two wheels will be distant from each other and the third in any given moving direction.

9. As for **Claim 4**, Gordon et al. as stated above since each of the three wheels are at a separate vertex of an equilateral triangle making up the base of the moving pedestal each two wheels will be distant from each other and the third in any given moving direction, including a direction perpendicular to the moving direction. Moreover, all three wheels are equidistant from each other; thus, at least two wheels will always be most distant.

10. As for **Claim 5**, Gordon et al. disclose, as shown in figures 1A and 5A – 5F, wherein a first line and a second line are provided (Y and X) on the floor surface to perpendicularly intersect at said reference position (initial target 20),

wherein two first sensors (B and C) for detecting the first line (Y; see figure 5A) and one second sensor (A; see figure 5B) for detecting the second line are provided on the moving pedestal (all sensors 18 are provided therein), and

wherein said reference position and said reference angle are found based on a position of each of the two first sensors at a time when the two first sensor each pass said first line, and a position of the second sensor at a time when said second passes the second (When the sensors begin to move from the initial target 20, the encoders begin to determine a moving amount.).

11. For **Claim 6**, Gordon et al. disclose, as shown in figures 1C, 2, 5A – 5F, 7, and 8 and as stated in columns 4 (lines 10 – 64), 5 (lines 36 – 58), 6 (lines 31 – 37), 7 (lines 50 – 66), 10 (lines 39 – 68), 11 (lines 1 – 4), and 12 (lines 16 – 37), an image pick-up system for picking up a real object image of an object, comprising:

a camera unit (camera 48) comprising a camera for picking up an image of an object mounted on a moving pedestal (12) via a pan head;

an calculating means (microprocessor 180) for calculating a positional relationship between the camera and the object (see column 4, lines 27 – 30; column 10, lines 64 – 69; and column 11, lines 1 – 4);

a setting means (microprocessor 180) for setting a reference position (initial encoder count from incremental position encoder 194) on a floor surface on which the moving pedestal moves and a reference angle (initial encoder count from wheel angle encoder 192) of said

moving pedestal (see column 6, lines 17 – 24 and 31 – 34) and for inputting the reference position and the reference angle to said calculating means (180);

a detection means (encoders 192 and 194) for detecting a moving amount of the moving pedestal from the reference position, and a rotation angle of the moving pedestal from the reference angle (see column 10, lines 39 – 69; and column 11, lines 1 – 4);

wherein said calculating means (microprocessor 180) calculates out a position and an angle of the camera with respect to the object based on of the reference position, the reference angle, the moving amount and the rotation angle of said moving pedestal (all of the above factors are used by the microprocessor 180 to calculate a "position error signal" used to produce an appropriate motor velocity for the motors of the moving pedestal), and the calculating means transmits data of the position and the angle of the camera with respect to the object to a computer for creating an image containing a real object image of the object taken with the camera (see column 10, lines 64 – 68; column 11, lines 1 – 4; and column 12, lines 16 – 37);

wherein said detection means detects the moving amount of the moving pedestal by measuring a length of a portion of a wheel of the moving pedestal, which has been brought into contact with the floor surface (see explanation below).

The incremental position encoder (194) is responsible for monitoring motor movement by encoding motor rotations. The wheel moves as the motor moves. Therefore, determining motor movement by encoding motor rotations directly corresponds to measuring the length of a portion of a wheel, which has been brought into contact with the floor surface. By measuring a length, Gordon et al. is determining the distance moved from the reference position (see column 10, lines 60 – 69; and column 11, lines 1 – 4).

In summary, Gordon et al. clearly disclose transmitting data of the position and the angle of the camera with respect to the object to a computer for creating an image containing a real object image of the object taken with the camera; however, Gordon et al. do not disclose an image pick-up system for operating together a real object image of an object taken with the camera and another image or a computer for operating together the real object image of the object taken with the camera and said another image based on the position and the angle of the camera with respect to the object.

On the other hand, Fellous also disclose an image pick-up system for capturing images of an object with a camera mounted on a moving pedestal. More specifically, Fellous teach, as shown in figures 1 and 2 and as stated in columns 5 (lines 3 – 23, 31 – 49, and 59 – 67), 6 (lines 6 – 25, 34 – 39, and 49 – 53), 7 (lines 1 – 18), an image pick-up method for capturing images of an object (24 and 13) with a camera (2) mounted on a moving pedestal (5) and for operating together (via computer 11) a real object image ("real images generated by the camera 2") of an object taken with the camera ("fine-lined rectangle 24") and another image ("synthetic image" shown on monitor 12), wherein a computer (11) is provided for operating together ("create a hybrid combined image" – see column 5, lines 18 – 27) the real object image ("real images") of the object taken with the camera (2) and said another image ("synthetic images") based on the position and the angle of the camera with respect to the object ("geometrical coherence" – see column 6, line 54 – column 7, line 15).

As stated in column 2 (lines 1 – 25) of Fellous, at the time the invention was made, it would have been obvious to one with ordinary skill in the art to have provided a computer for operating together the real object image of the object taken with the camera and said another

image based on the position and the angle of the camera with respect to the object as taught by Fellous, in the image pick-up system including a camera mounted on a pedestal disclosed by Gordon et al., for the following advantages: facilitating easy determination in a host computer of a parametric model of a real camera analogous to a virtual camera, providing real control of a virtual camera by a real camera, securing perfect coherence between a real image and a virtual image, and permitting a free combination of real images and geometrically coherent synthetic images.

12. As for **Claim** 7, Gordon et al. disclose, wherein said setting means (microprocessor 180) includes a reference detection mechanism (optosensors 18) for detecting the reference position on the floor surface on which the move pedestal moves and the reference angle of the moving pedestal (initial target 20).

The setting means (microprocessor 180) sets a reference position (initial encoder count from incremental position encoder 194) and the reference angle (initial encoder count from wheel angle encoder 192).

13. As for **Claim 9**, Gordon et al. disclose, as shown in figures 1A, 1C, and 8, the moving pedestal (dolly 12) comprises three wheels (three identical wheel assemblies 30/42); wherein three encoders (wheel angle encoder 192) are respectively provided for the three wheels (see column 10, lines 50 – 56) for detecting a moving distance of a respective one the wheels (see column 10, lines 60 – 69; and column 11, lines 1 – 4).

14. As for **Claim 10**, Gordon et al. disclose, that the moving pedestal is comprised of three wheels wherein each wheel is provided with a wheel angle encoder (194). The wheel angle encoders (194) provide data to the microprocessor (180), wherein the microprocessor (180)

continuously subtracts the current positional data (including the position and rotation angle of the moving pedestal) from target positional data to obtain a position error signal. Therefore, the rotation angle is calculated based upon the moving distances of all three wheels, which includes two wheels that are distant from each other in terms of a moving direction. In fact, since each of the three wheels are at a separate vertex of an equilateral triangle making up the base of the moving pedestal each two wheels will be distant from each other and the third in any given moving direction.

15. As for **Claim 11**, Gordon et al. as stated above since each of the three wheels are at a separate vertex of an equilateral triangle making up the base of the moving pedestal each two wheels will be distant from each other and the third in any given moving direction, including a direction perpendicular to the moving direction. Moreover, all three wheels are equidistant from each other; thus, at least two wheels will always be most distant.

16. For **Claim 13**, Gordon et al. disclose, as shown in figures 1C, 2, 5A – 5F, 7, and 8 and as stated in columns 4 (lines 10 – 64), 5 (lines 36 – 58), 6 (lines 31 – 37), 7 (lines 50 – 66), 10 (lines 39 – 68), 11 (lines 1 – 4), and 12 (lines 16 – 37), an image pick-up system for picking up an image of an object, said system comprising:

a moving pedestal (dolly 12) including three wheels (three identical wheel assemblies 30/42);

a camera unit (camera 48) having a structure in which a camera for picking up an image of an object, is mounted via a pan head (rotatable camera head 48) on said moving pedestal (12);

an operation means (microprocessor 180) for calculating a positional relationship between the camera and the object (see column 4, lines 27 – 30; column 10, lines 64 – 69; and column 11, lines 1 – 4);

three encoders (wheel angle encoder 192) provided respectively for said three wheels of said moving pedestal (see column 10, lines 50 – 56);

a plurality of sensors (optosensors 18) provided on said moving pedestal (12), for detecting a predetermined mark (targets 20) made on a floor surface ("studio floor") on which said moving pedestal (12) moves; and

a setting means (microprocessor 180) for setting a reference position (initial encoder count from incremental position encoder 194) on the floor surface, and a reference angle (initial encoder count from wheel angle encoder 192) of said moving pedestal, which are found from detection values of said plurality of sensors (18; detects that the moving pedestal is at an "initial target 20") and a pulse numbers counted by said encoders in the movement of said moving pedestal, to said operation means (see column 6, lines 17 – 24 and 31 – 34);

wherein said calculation means (microprocessor 180) calculates out a position and an angle of the camera with respect to the object on the basis of the reference position, the reference angle, the moving amount and the rotation angle of said moving pedestal (all of the above factors are used by the microprocessor 180 to calculate a "position error signal" used to produce an appropriate motor velocity for the motors of the moving pedestal), which are obtained from the pulse numbers counted by said encoders, and transmits data of the position and the angle of the camera with respect to the object, to a computer for creating an image containing a real object

image of the object taken with the camera (see column 10, lines 64 – 68; column 11, lines 1 – 4; and column 12, lines 16 – 37);

wherein said detection means detects the moving amount of the moving pedestal by measuring a length of a portion of a wheel of the moving pedestal, which has been brought into contact with the floor surface (see explanation below).

The incremental position encoder (194) is responsible for monitoring motor movement by encoding motor rotations. The wheel moves as the motor moves. Therefore, determining motor movement by encoding motor rotations directly corresponds to measuring the length of a portion of a wheel, which has been brought into contact with the floor surface. By measuring a length, Gordon et al. is determining the distance moved from the reference position (see column 10, lines 60 – 69; and column 11, lines 1 – 4).

In summary, Gordon et al. clearly disclose transmitting data of the position and the angle of the camera with respect to the object to a computer for creating an image containing a real object image of the object taken with the camera; however, Gordon et al. do not disclose an image pick-up system for operating together a real object image of an object taken with the camera and another image or a computer for operating together the real object image of the object taken with the camera and said another image based on the position and the angle of the camera with respect to the object.

On the other hand, Fellous also disclose an image pick-up system for capturing images of an object with a camera mounted on a moving pedestal. More specifically, Fellous teach, as shown in figures 1 and 2 and as stated in columns 5 (lines 3 – 23, 31 – 49, and 59 – 67), 6 (lines 6 – 25, 34 – 39, and 49 – 53), 7 (lines 1 – 18), an image pick-up method for capturing images of

an object (24 and 13) with a camera (2) mounted on a moving pedestal (5) and for operating together (via computer 11) a real object image ("real images generated by the camera 2") of an object taken with the camera ("fine-lined rectangle 24") and another image ("synthetic image" shown on monitor 12), wherein a computer (11) is provided for operating together ("create a hybrid combined image" – see column 5, lines 18 – 27) the real object image ("real images") of the object taken with the camera (2) and said another image ("synthetic images") based on the position and the angle of the camera with respect to the object ("geometrical coherence" – see column 6, line 54 – column 7, line 15).

As stated in column 2 (lines 1 – 25) of Fellous, at the time the invention was made, it would have been obvious to one with ordinary skill in the art to have provided a computer for operating together the real object image of the object taken with the camera and said another image based on the position and the angle of the camera with respect to the object as taught by Fellous, in the image pick-up system including a camera mounted on a pedestal disclosed by Gordon et al., for the following advantages: facilitating easy determination in a host computer of a parametric model of a real camera analogous to a virtual camera, providing real control of a virtual camera by a real camera, securing perfect coherence between a real image and a virtual image, and permitting a free combination of real images and geometrically coherent synthetic images.

Allowable Subject Matter

17. **Claims 12 and 14** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base

claim and any intervening claims. The following is a statement of reasons for the indication of allowable subject matter:

As for **Claims 12 and 14**, while the closest prior art simply disclose of a wheel angle encoder connected to the wheel for determining the rotation angle of the wheel and an incremental position encoder connected to a motor for determining the distance traveled in a moving direction of the moving pedestal;

the closest prior art does not teach or fairly suggest wherein rollers are provided as being brought into contact with the wheels, respectively, to be rotated along with the rotation of the wheels, and the moving distance of each of the wheels is found from the number of rotation of the respective roller and a pulse number counted by said respective encoder.

Conclusion

18. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Justin P Misleh whose telephone number is 571.272.7313. The Examiner can normally be reached on Monday through Friday from 8:00 AM to 5:00 PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Ngoc Yen Vu can be reached on 571.272.7320. The fax phone number for the organization where this application or proceeding is assigned is 571.273.3000.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JPM
November 4, 2005

NGOC-YEN VU
PRIMARY EXAMINER